Ontario

Ministry of Health and Long-Term Care
Public Health Division

Ontario Influenza Bulletin 2006-2007 Season

SURVEILLANCE WEEK 10 (March 4 -10) 2007

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from March 4 - 10, 2007, (Week 10). The analysis for this issue occurred on Thursday March 15, 2007, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during Week 10, 2007 was slightly lower compared to the previous week. Ninety five sporadically occurring cases of influenza A were reported through iPHIS from health units; while 4 new institutional outbreaks of influenza A were reported. Only Toronto reported 'widespread" influenza activity, while Central East, Central West, Eastern, North East, North West and South West regions reported 'localized' influenza activity levels.

For a definition of influenza-like illness (ILI) activity levels and links to websites providing current influenza information from other sources, please refer to the attached Appendix- I. If you would like to provide feedback on the Bulletin, please contact Shafiq Chowdhury (shafiq.chowdhury@moh.gov.on.ca, 416-327-7807) or Anne-Luise Winter (anne-luise.winter@moh.gov.on.ca, 416-327-7301).

Table 1: Summary of confirmed influenza cases and institutional influenza outbreaks by health region (Week 10, 2007).

Confirmed Influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	16	18	23	18	4	16	95
Influenza B	0	0	0	0	0	0	0	0
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	0	16	18	23	18	4	16	95
Institutional influenza outbreaks‡	**0**	**1**	**2**	**0**	**0**	**0**	**1**	**4**

SOURCE: MOHLTC [iPHIS, Health Unit Reports to PHD]

* Includes reports of sporadically occurring influenza through iPHIS, as well as cases in institutional outbreaks, with dates of onset in the surveillance period.

‡ Confirmed outbreaks in institutions with onset date of symptoms during the surveillance period.

Table 2: Confirmed cases of influenza by health unit & health region, with an episode date† during Week 10, 2007.

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	0	0	0
	Thunder Bay District	0	0	0
	TOTAL NORTH WEST	**0**	**0**	**0**
North East	Algoma	4	0	4
	North Bay Parry Sound District	0	0	0
	Porcupine	3	0	3
	Sudbury & District	8	0	8
	Timiskaming	1	0	1
	TOTAL NORTH EAST	**16**	**0**	**16**
Eastern	City of Ottawa	10	0	10
	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	2	0	2
	Kingston, Frontenac, Lennox & Addington	1	0	1
	Leeds, Grenville And Lanark District	5	0	5
	Renfrew County And District	0	0	0
	TOTAL EASTERN	**18**	**0**	**18**
Central East	Durham Region	0	0	0
	Haliburton, Kawartha, Pine Ridge	4	0	4
	Peel Region	11	0	11
	Peterborough County-City	4	0	4
	Simcoe Muskoka District	3	0	3
	York Region	1	0	1
	TOTAL CENTRAL EAST	**23**	**0**	**23**
Toronto	Toronto	18	0	18
	TOTAL TORONTO	**18**	**0**	**18**
South West	Chatham-Kent	0	0	0
	Elgin-St. Thomas	0	0	0
	Grey Bruce	0	0	0
	Huron County	2	0	2
	Lambton County	0	0	0
	Middlesex-London	1	0	1
	Oxford County	0	0	0
	Perth District	0	0	0
	Windsor-Essex County	1	0	1
	TOTAL SOUTHWEST	**4**	**0**	**4**
Central West	Brant County	1	0	1
	City Of Hamilton	10	0	10
	Haldimand-Norfolk	0	0	0
	Halton Region	2	0	2
	Niagara Region	0	0	0
	Waterloo Region	1	0	1
	Wellington-Dufferin-Guelph	2	0	2
	TOTAL CENTRAL WEST	**16**	**0**	**16**
	TOTAL ONTARIO	**95**	**0**	**95**

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Table 3: Cumulative* confirmed cases of influenza by health unit & health region with an episode date† between September 1, 2006 – March 10, 2007

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	30	0	30
	Thunder Bay District	14	0	14
	TOTAL NORTH WEST	**44**	**0**	**44**
North East	Algoma	15	0	15
	North Bay Parry Sound District	61	0	61
	Porcupine	38	0	38
	Sudbury & District	32	0	32
	Timiskaming	1	0	1
	TOTAL NORTH EAST	**147**	**0**	**147**
Eastern	City Of Ottawa	63	0	63
	Eastern Ontario	1	0	1
	Hastings & Prince Edward Counties	27	0	27
	Kingston, Frontenac, Lennox & Addington	84	1	85
	Leeds, Grenville And Lanark District	19	0	19
	Renfrew County And District	5	0	5
	TOTAL EASTERN	**199**	**1**	**200**
Central East	Durham Region	54	0	54
	Haliburton, Kawartha, Pine Ridge	112	1	113
	Peel Region	156	2	158
	Peterborough County-City	84	0	84
	Simcoe Muskoka District	80	0	80
	York Region	91	0	91
	TOTAL CENTRAL EAST	**577**	**3**	**580**
Toronto	Toronto	432	0	432
	TOTAL TORONTO	**432**	**0**	**432**
South West	Chatham-Kent	8	0	8
	Elgin-St. Thomas	4	0	4
	Grey Bruce	41	1	42
	Huron County	31	0	31
	Lambton County	11	0	11
	Middlesex-London	43	0	43
	Oxford County	16	0	16
	Perth District	38	0	38
	Windsor-Essex County	15	0	15
	TOTAL SOUTHWEST	**207**	**1**	**208**
Central West	Brant County	20	0	20
	City Of Hamilton	232	2	234
	Haldimand-Norfolk	18	0	18
	Halton Region	95	0	95
	Niagara Region	70	0	70
	Waterloo Region	111	0	111
	Wellington-Dufferin-Guelph	76	0	76
	TOTAL CENTRAL WEST	**622**	**2**	**624**
	TOTAL ONTARIO	**2228**	**7**	**2235**

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* Cumulative case counts include late reports and records that are otherwise reconciled. Therefore, cumulative counts may not equal new cases plus previous cumulative value.

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Influenza Subtype(s):
During Week 10, 4418 isolates were received by the Public Health Agency of Canada, with a total of 874 testing positive for influenza A and 68 for influenza B. The majority of influenza A isolates (317) were from Quebec (36.3%), while 208 (23.8%) were from Ontario, and 109 (12.5%) from Alberta. Sixty three influenza B isolates were from Quebec (92.6%), while 3 (4.4%) were from Alberta and 2 (2.9%) were from Ontario.*

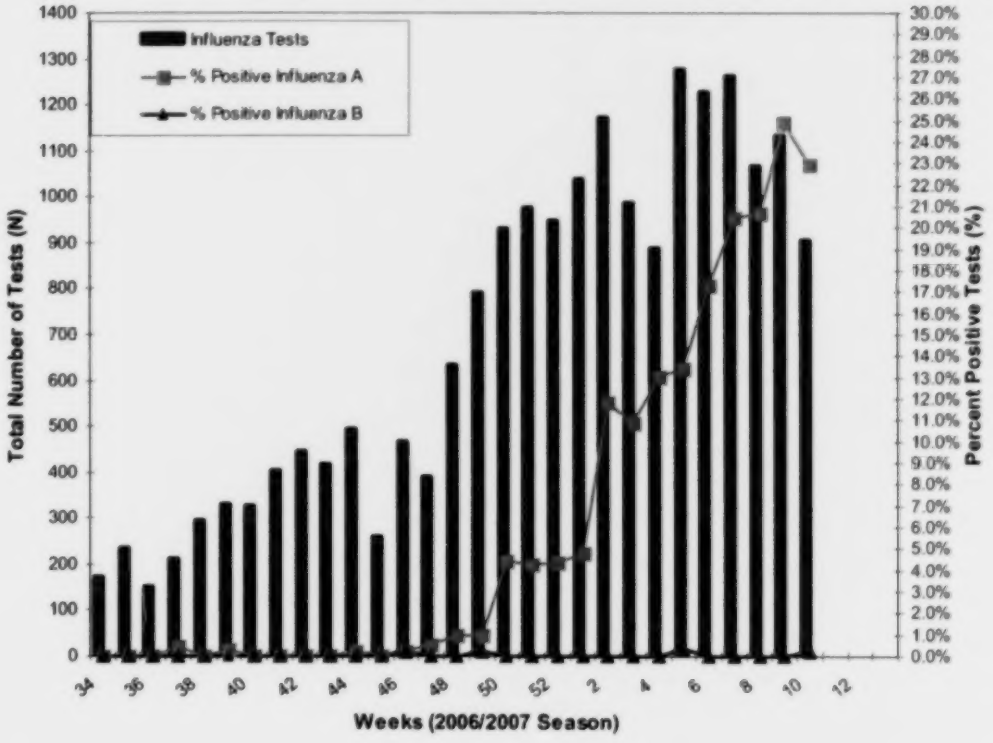
Antigenic Characterization:
The National Microbiology Laboratory (NML) has characterized 614 influenza viruses for the 2006-2007 influenza season: 202 A/New Caledonia/20/1999(H1N1)-like, 382 A/Wisconsin/67/05(H3N2)-like, 7 B/Malaysia/2506/2004-like, and 23 B/Shanghai/361/2002-like. All but the B/Shanghai/361/2002-like strain are included in the composition of the 2006-2007 Canadian influenza vaccine. Of the influenza A viruses characterized, 80% of the A (H1N1) viruses were from the West while the majority of the A (H3N2) viruses were from Ontario (59%) and British Columbia (25%).

Antiviral Resistance:
Since the start of the season, the NML has tested 541 influenza A isolates (167 H1N1, 374 H3N2) for amantadine resistance. None of the H1N1 isolates tested were resistant to amantadine; however, 28% (104/374) of the H3N2 isolates were resistant. Of the 498 isolates (471 influenza A, 26 influenza B) tested for oseltamivir resistance, none were found to be resistant. **

Note: Based on the World Health Organization recommendations, Canada's National Advisory Committee on Immunization (NACI) recommended the **2006-2007** influenza vaccine contain an **A/New Caledonia-like**, an **A/Wisconsin-like** & a **B/Malaysia-like** virus strain.

* These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada for Week 10, 2007.
** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for week 9, 2007.

Figure 1: Total number of influenza tests performed and percent of positive tests in Ontario reported to the Centre for Infectious Disease Prevention and Control (CIDPC), by report week .



Source: Public Health Agency of Canada
* Total numbers reported include late reports; therefore totals may not be equal to the sum of the weekly numbers.

Note: Cumulative numbers for season to date are available through FluWatch: http://www.phac-aspc.gc.ca/fluwatch/

Table 4a: Institutional respiratory infection outbreaks in Ontario: New Outbreaks* in Week 10 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	**N**	**% (of outbreaks)**
Influenza A	4	44.4
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Other organisms	0	0.0
No organism identified	5	55.6
TOTAL	***9***	***100***
Total Respiratory Infection Outbreaks of the Season to date**	**N**	**% (of outbreaks)**
Influenza A	130	23.8
Influenza B	1	0.2
Parainfluenza (All types)	19	3.5
RSV	73	13.3
Other organisms	28	5.1
No organism identified	296	54.1
TOTAL	***547***	***100***
Types of Institutions (All Outbreaks) **	**N**	**% (of outbreaks)**
Long-Term Care Homes	374	68.3
Hospitals	31	5.7
Retirement Homes	51	9.3
Other	1	0.2
Unknown	90	16.5
TOTAL	***547***	***100***

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* New outbreaks are those in which the date of onset of illness in the first case occurred and recorded through iPHIS in the current surveillance period; i.e. March 4 -10, 2007

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2006 – March 10, 2007

Table 4b: Outbreak Related Complications in institutional respiratory infection outbreaks in Ontario during the Surveillance Season*

Outbreak Related Complications (All Outbreaks)	N	% (of total cases)
Total Cases		
Residents	6254	69.1
Patients	681	7.5
Staff	2121	23.4
Total Cases	**9056**	**100**
Deaths		**% (of cases per role)**
Residents	146	2.3
Patients	12	1.8
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		**% (of cases per role)**
Residents	215	3.4
Patients	9	1.3
Staff	9	0.4
Hospitalizations		**% (of cases per role)**
Residents	256	4.1
Staff	1	0.1
Outbreak Related Complications (Influenza Outbreaks)	**N**	**% (of total cases)**
Total Cases		
Residents	1330	71.0
Patients	139	7.4
Staff	405	21.6
Total Cases	**1874**	**100**
Deaths		**% (of cases per role)**
Residents	43	3.2
Patients	2	1.4
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		**% (of cases per role)**
Residents	71	5.3
Patients	4	2.8
Staff	3	0.7
Hospitalizations		**% (of cases per role)**
Residents	80	6.0
Staff	0	0.0

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2006 – March 10, 2007

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2006 – March 10, 2007 by causative organism

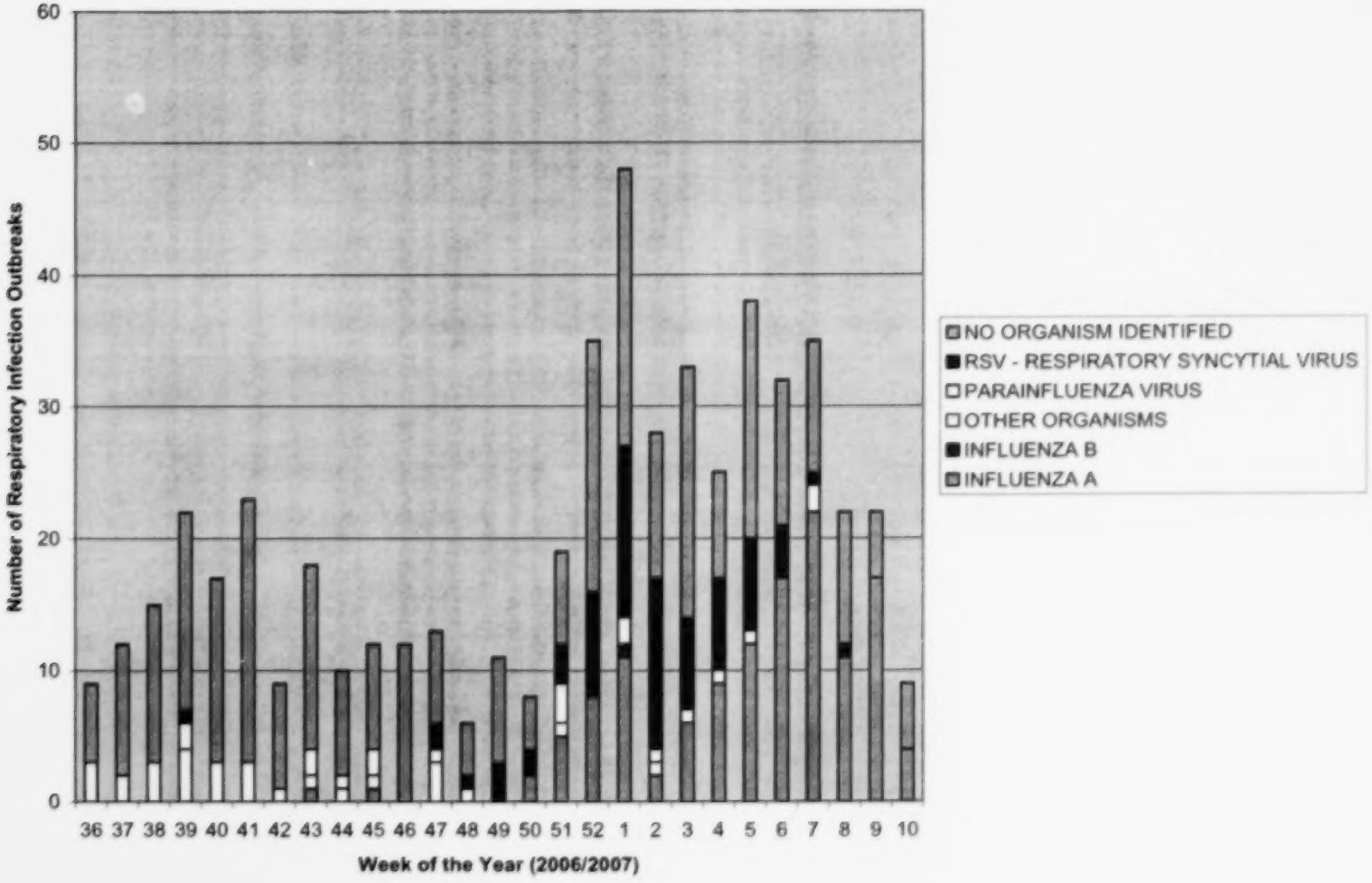
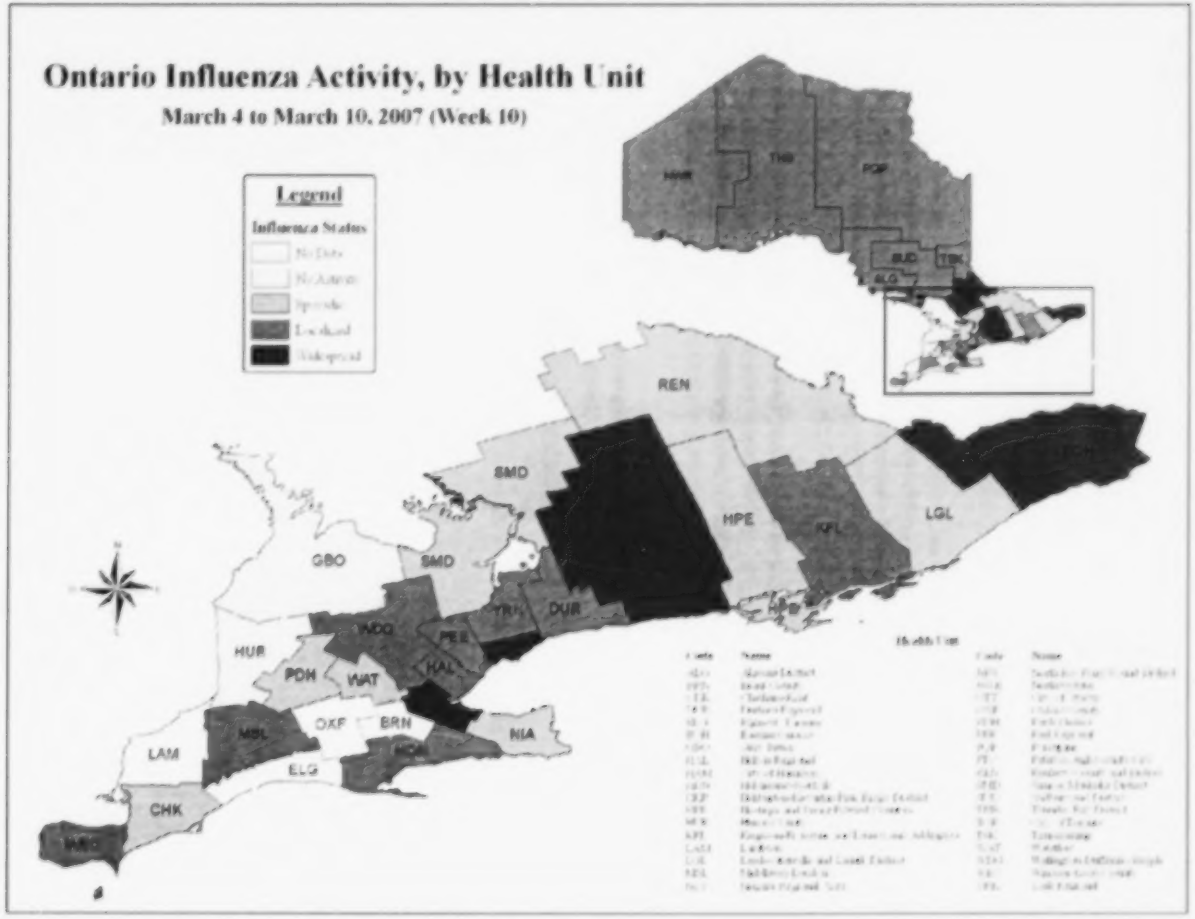


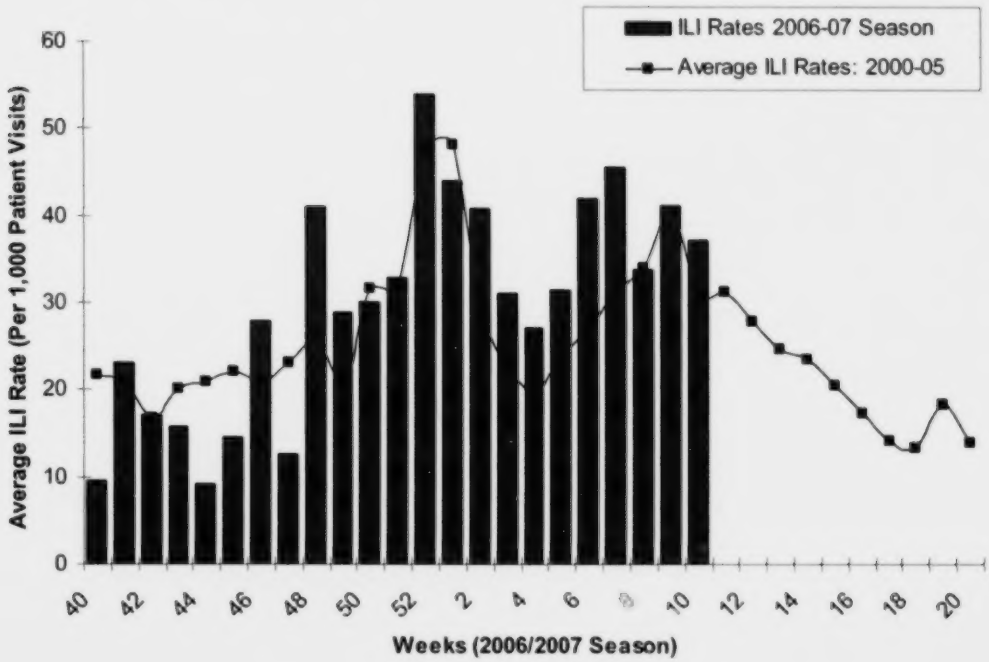
Figure 3: Influenza Activity* levels in Ontario by health unit & health region for Week 10



SOURCE: MOHLTC [Provincial Influenza Activity Report (Appendix C) Database]

* Influenza activity levels are assigned by local public health units and reported to the MOHLTC by the Tuesday following the end of the surveillance week at 4 pm. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory confirmed institutional outbreaks. Please refer to detailed definitions for the 2006-2007 season included in the Appendix-1]

Figure 4: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario in 2006- 2007 season, by report week, Compared to Ontario average† (1999/2000 to 2004/05 seasons).



Source: Public Health Agency of Canada

* Sentinel physician information is reported to Public Health Agency of Canada.

†No data available for mean rate in previous years for weeks 21 to 39 (1999-2000 through 2004-2005 seasons). During weeks 20-39, 2002-2003/2004-2005 seasons, ILI is reported once every two weeks, on even weeks only.

Table 5: Average Influenza-like illness consultation rate (per 1,000 patient visits) by age group and postal code as reported by Sentinel Physicians* in Ontario, for Week 10.

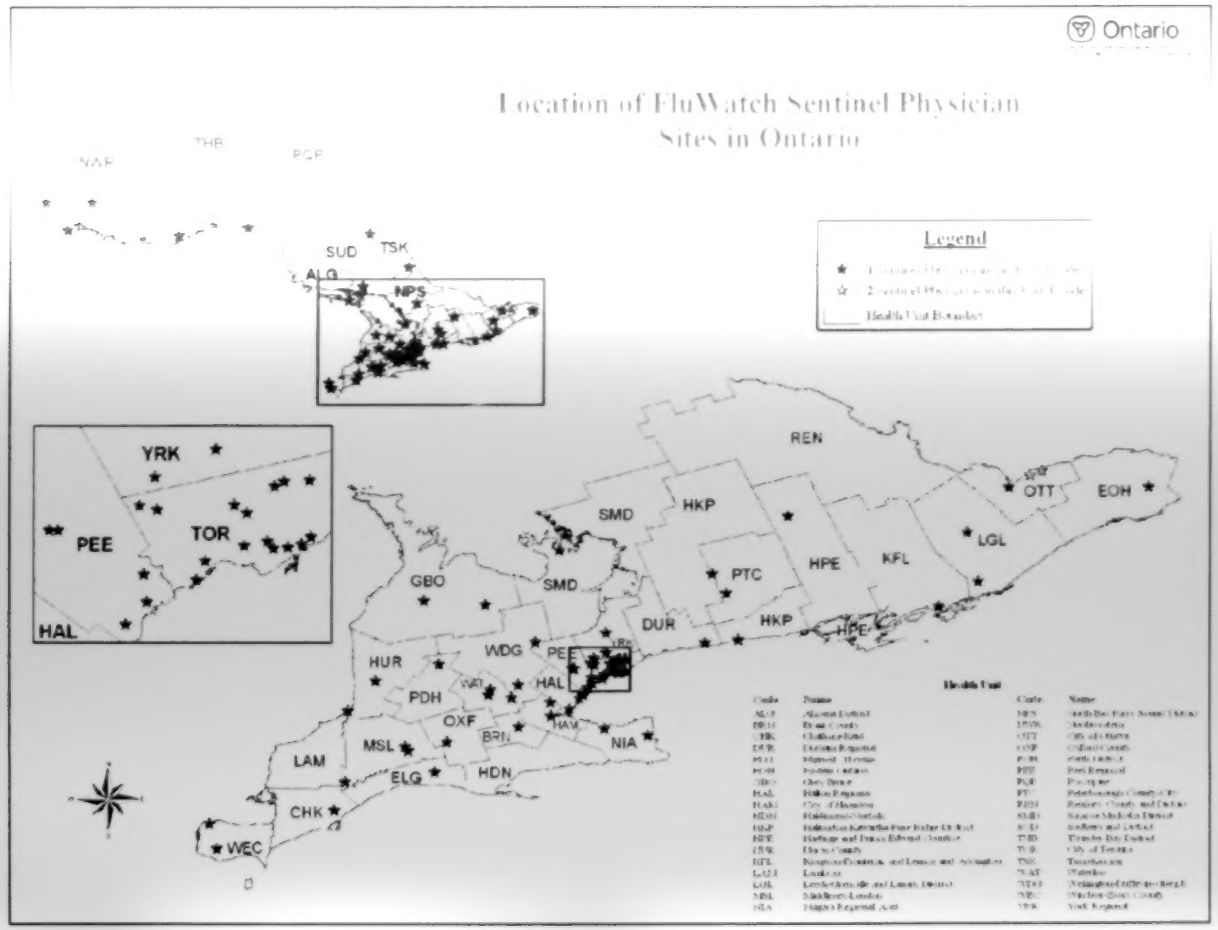
Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0C1A0	0	0	1	0	0
K1L8H2	0	0	0	0	0
K2L3C8	0	0	2	0	0
K2P1V3	0	0	0	0	0
K1J9M2	0	1	1	0	0
K0H2N0	2	0	1	1	0
K7H2W6	0	0	0	0	0
K0L1C0	0	0	0	0	0
L1A3W4	0	0	0	0	0
K0M1A0	0	0	0	0	0
L1B1H8	0	0	0	0	0
L4J7Y3	0	0	1	0	0
L4G7Y3	0	0	0	0	0
M5M1B2	0	0	0	0	0
M4X1W4	0	0	0	0	0
M6G4A1	1	1	0	0	0
M4E1V8	0	0	0	0	0
M8Y1W3	0	0	0	0	0
M2N6H7	0	0	0	0	0
M2J2Z1	0	0	0	0	0
M3H1T1	0	0	0	0	0
M2K1E1	0	0	0	0	0
M9W6N5	0	0	0	0	0
M9W4L6	1	0	2	0	0
M8V2Z5	0	1	0	0	0
L5J2W4	0	0	0	0	0
L5J2W4	0	0	0	0	0
L5J2W4	0	0	1	0	0
L4Y2N8	0	0	0	0	0
L6W2A4	0	0	0	0	0
L9W1G2	0	0	1	0	0
L6L2X4	0	0	0	0	0
L9H1V1	0	1	1	0	0
J2E1Y3	0	0	0	0	0
L0R1B0	0	0	0	0	0
N3C2E2	0	0	1	0	0
N2G1P2	0	0	0	0	0
N2M3B5	0	0	0	0	0
N4W1P9	0	0	0	0	0
N5C1G5	0	0	0	0	0
N8X2G3	2	4	8	0	0
N0M1T0	0	0	0	0	0
N6C2R5	0	0	0	0	0
N0M1L0	0	0	0	0	0
N0G1L0	0	0	0	0	0
N0C1E0	0	0	0	0	0
L4R4P4	0	0	0	0	0
P0A1C0	0	0	1	1	0
P0P1S0	0	1	5	0	0
P0M2L0	0	3	3	3	0
P7E1H5	0	0	0	0	0
P0T2E0	0	0	0	0	0
P0W1E0	0	1	2	0	0
P9N3W7	0	0	0	0	0
ILI Sum	6	13	31	5	0
ILI Consultation Rate (per 1,000 patient visits)	54.05	80.25	38.32	12.66	0.00

Source: Public Health Agency of Canada

* Sentinel physician information is reported to the Public Health Agency of Canada

Note: The small numbers of sentinel physicians reporting at the local level make the ILI rates unstable. Please interpret these data correspondingly.

Figure 5: Geographic Distribution of Sentinel Physicians in Ontario



Source: National Research System (NaReS), College of Family Physicians of Canada

* Sentinel physician information is reported to the Public Health Agency of Canada

FURTHER INFORMATION

1. Ontario Ministry of Health and Long-Term Care
   Previous issues of the *Ontario Influenza Bulletin* can be accessed at:
   http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_05/flubul_mn.html

2. Public Health Agency of Canada
   Issues of FluWatch can be accessed at:
   www.phac-aspc.gc.ca/fluwatch/

3. United States Centers for Disease Control and Prevention
   www.cdc.gov/flu/

INFORMATION ABOUT AVIAN INFLUENZA

For latest information on the status of avian influenza worldwide please use the following link:

Public Health Agency of Canada
http://www.phac-aspc.gc.ca/h5n1/index.html

APPENDIX - I

Definitions for influenza activity levels:

No Data: No activity report corresponding to the surveillance week was received at the Ministry of Health and Long-Term Care Call Centre by the Tuesday (at 4 p.m.) following the end of the surveillance period.

No Activity: No laboratory confirmed* influenza cases(s) or outbreak detected during the past four weeks within the influenza surveillance region, however, sporadically occurring **ILI** may be reported†

Sporadic: Sporadically occurring **ILI and laboratory confirmed influenza* case(s) with NO outbreaks** detected within the influenza surveillance region†

Localized: sporadically occurring **ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI** in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring **in less than 50% of the influenza surveillance region(s)**†

Widespread: sporadically occurring **ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI** in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring **in greater than or equal to 50% of the influenza surveillance region(s)**†

* Confirmation of influenza within the surveillance region at any time within the prior week
† Sub-regions within the province or territory as defined by the provincial/territorial epidemiologist

Influenza-Like Illness (ILI) Definitions:

A) ILI in the general population:

Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which could be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

B) ILI/Influenza outbreaks:

Schools and work sites: greater than 10% absenteeism on any day, most likely due to ILI.

Residential institutions: two or more cases of ILI within a seven-day period, **including at least one laboratory confirmed case**.

Influenza Surveillance Weeks 2006-2007 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
11	11-Mar-07	17-Mar-07	20-Mar-07
12	18-Mar-07	24-Mar-07	27-Mar-07
13	25-Mar-07	31-Mar-07	3-Apr-07
14	1-Apr-07	7-Apr-07	10-Apr-07
15	8-Apr-07	14-Apr-07	17-Apr-07
16	15-Apr-07	21-Apr-07	24-Apr-07
17	22-Apr-07	28-Apr-07	1-May-07
18	29-Apr-07	5-May-07	8-May-07
19	6-May-07	12-May-07	15-May-07
20	13-May-07	19-May-07	22-May-07
21	20-May-07	26-May-07	29-Jun-07
22	27-May-07	2-Jun-07	5-Jun-07
23	3-Jun-07	9-Jun-07	12-Jun-07
24	10-Jun-07	16-Jun-07	19-Jun-07
25	17-Jun-07	23-Jun-07	26-Jun-07
26	24-Jun-07	30-Jun-07	3-Jul-07
27	1-Jul-07	7-Jul-07	10-Jul-07
28	8-Jul-07	14-Jul-07	17-Jul-07
29	15-Jul-07	21-Jul-07	24-Jul-07
30	22-Jul-07	28-Jul-07	31-Aug-07
31	29-Jul-07	4-Aug-07	7-Aug-07
32	5-Aug-07	11-Aug-07	14-Aug-07
33	12-Aug-07	18-Aug-07	21-Aug-07
34	19-Aug-07	25-Aug-07	28-Sep-07
35	26-Aug-07	1-Sep-07	4-Sep-07